



RE-ENGINEERING OF DRIP IRRIGATION SYSTEMS, ADAPTED TO LOCAL CONDITIONS IN MOROCCO

Maya Benouniche, Margreet Zwarteveen, Marcel Kuper, Ali Hammani, Sami Bouarfa, and Jean-Philippe Venot

1st World Irrigation Forum and 64th IEC Meeting, 29 September - 5 October 2013, Mardin

The introduction of drip irrigation in Morocco ... large farmers and international standards in the first

- Drip irrigation was introduced in Morocco from the 1970s onwards on large-scale farms with imported equipment, following the international standards
- From 1996 onwards, subsidy procedures were introduced progressively by the State to promote water saving and water productivity
- Small and medium-scale farmers introduced drip irrigation from the mid-nineties onwards. They had learned about drip irrigation on large-scale farms, and had to adapt it to their situations

1) Different types of drip irrigation systems adapted to local conditions

a) Mobile drip irrigation system

“learn the tricks of the trade”

“In case of informal tenure contracts”



b) Valve drip irrigation systems to deal with undulating plots, and irrigate plots up-hill



Their ambition is generally to evolve towards a regular (and more complete) drip irrigation system (*rasmi*).

2) Locals adaptations of equipmentby local fitters, farmers, and welders

"It's me who produces the original"

Manufacturing a "*hydrocyclone*" (sand filter system) by a local welder

Copies an imported filter system in 1998	Good quality, appreciated by farmers
From 2000 onwards	Production of 30-40 filters/year, followed by other welders
From 2008 onwards, subsidies of 80-100%	Standards of subsidy procedure followed by local craftsmen, but local equipment became integrated in subsidy procedure
From 2010 onwards	Stronger competition, everyone tried to innovate, and fabricate the best product



Re-engineering drip irrigation making it.... accessible to the small-scale farmers

- Drip irrigation systems were first deconstructed, before designing alternative low-cost systems
- Stepping stone theory (Shah) : towards designing and using “regular” systems, following local standards
- Local components even found their way in the subsidized programs, which through their flexibility progressively incorporated local fabricates



**Thank you for your
attention**

